

299-E25-24 (A4769) Log Data Report

Borehole Information:

Borehole: 299-E25-24 (A4769)			Site: 216-A-37-2 Crib		
Coordinates (WA St Plane)		GWL¹ (ft) : 283.05		GWL Date: 04/26/07	
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
135520.843	576193.873	05/83	683.11 ft	295	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	2.6	8 5/8	8	5/16	2.6	29.5

Borehole Notes:

The logging engineer measured the casing diameter of the 8-in. casing using a caliper and steel tape. The "Well Construction and Completion Summary As-Built" indicates grout around the 8-in. casing from 0 to 100 ft and a cement plug from 293 to 295 ft. A 12-in. surface casing may exist from 0 to 30 ft although the record regarding this possibility is uncertain. The total gamma and natural gamma log data support the presence of the 12-in. casing. No corrections to log data were made for the grout or for the 12-in. casing. Logging data acquisition is referenced to the TOC.

Logging Equipment Information:

Logging System:	Gamma 4N		Type:	SGLS (60%)
Effective Calibration Date:	02/14/07	Calibration Reference:	HGLP-CC-009	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4H		Type:	NMLS
Effective Calibration Date:	11/22/06	Calibration Reference:	HGLP-CC-002	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3	4 Repeat	
Date	04/26/07	04/27/07	04/30/07	04/30/07	
Logging Engineer	Spatz	Spatz	Spatz	Spatz	
Start Depth (ft)	292.0	137.0	40.0	158.0	
Finish Depth (ft)	136.0	39.0	3.0	128.0	
Count Time (sec)	100	100	100	100	
Live/Real	R	R	R	R	
Shield (Y/N)	N	N	N	N	
MSA Interval (ft)	1.0	1.0	1.0	1.0	
ft/min	N/A ²	N/A	N/A	N/A	
Pre-Verification	DN761CAB	DN771CAB	DN781CAB	DN781CAB	
Start File	DN761000	DN771000	DN781000	DN781038	
Finish File	DN761156	DN771098	DN781037	DN781068	
Post-Verification	DN761CAA	DN771CAA	DN781CAA	DN781CAA	
Depth Return Error (in.)	-3	-1	0	-1	

HGLP-LDR-106, Rev. 0

Log Run	1	2	3	4 Repeat	
Comments	No fine gain adjustment	No fine gain adjustment	No fine gain adjustment	Fine gain adjustment after file -040	

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	5	6 Repeat			
Date	05/01/07	05/02/07			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	282.0	170.0			
Finish Depth (ft)	95.0	140.0			
Count Time (sec)	15	15			
Live/Real	R	R			
Shield (Y/N)	N	N			
Sample Interval (ft)	0.25	0.25			
ft/min	N/A	N/A			
Pre-Verification	DH542CAB	DH542CAB			
Start File	DH542000	DH542754			
Finish File	DH542753	DH542874			
Post-Verification	DH542CAA	DH542CAA			
Depth Return Error (in.)	N/A	- 2.5			
Comments	None	None			

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde and measurements are referenced to top of casing. Moisture data were only acquired below 100 ft because grout is reported to exist around the casing from the ground surface to 100 ft.

Analysis Notes:

Analyst:	Henwood	Date:	11/06/07	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging systems were performed before and after the day's data acquisition. The acceptance criteria were met.

A casing correction for a 5/16-in. thick casing was applied to the SGLS data. NMLS data were corrected for an 8-in. borehole.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G4NFeb07.xls using an efficiency function and corrections for casing and dead time as determined from annual calibrations. The NMLS count rate data were converted to percent volumetric moisture.

Results and Interpretations:

Cs-137 was detected at a few depth locations using the routine processing software. Upon inspection of the spectra, it was determined these detections are statistical fluctuations and are not considered valid.

Moisture data indicate some variability.

The SGLS and NMLS repeat logs show good repeatability.

List of Log Plots:

Depth Reference is top of casing

Manmade Radionuclides (2 pages)

Natural Gamma Logs (2 pages)

Combination Plot (3 pages)

Combination Plot (0 -300 ft)

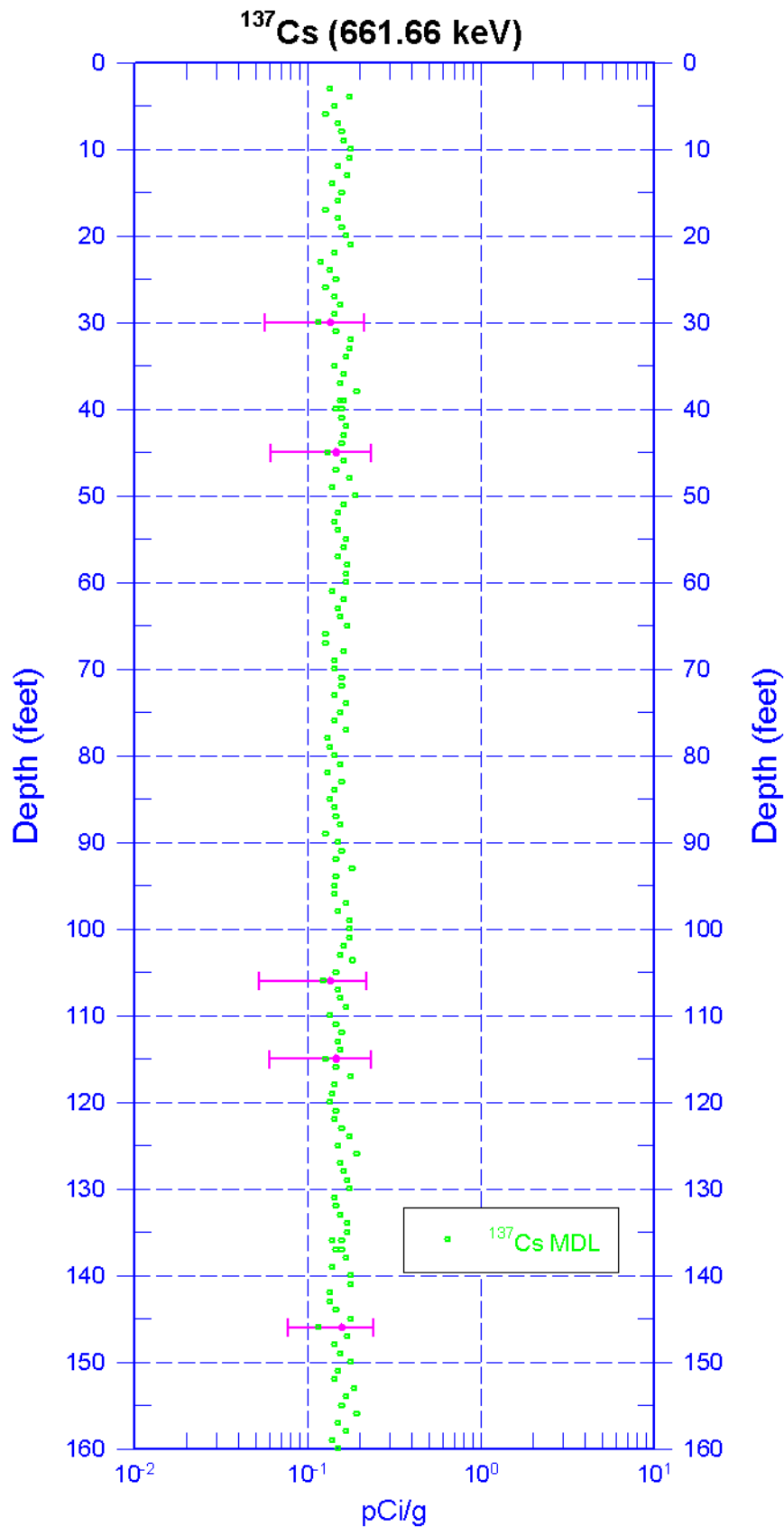
Total Gamma, Dead Time, & Moisture (2 pages)

Repeat of Natural Gamma Logs

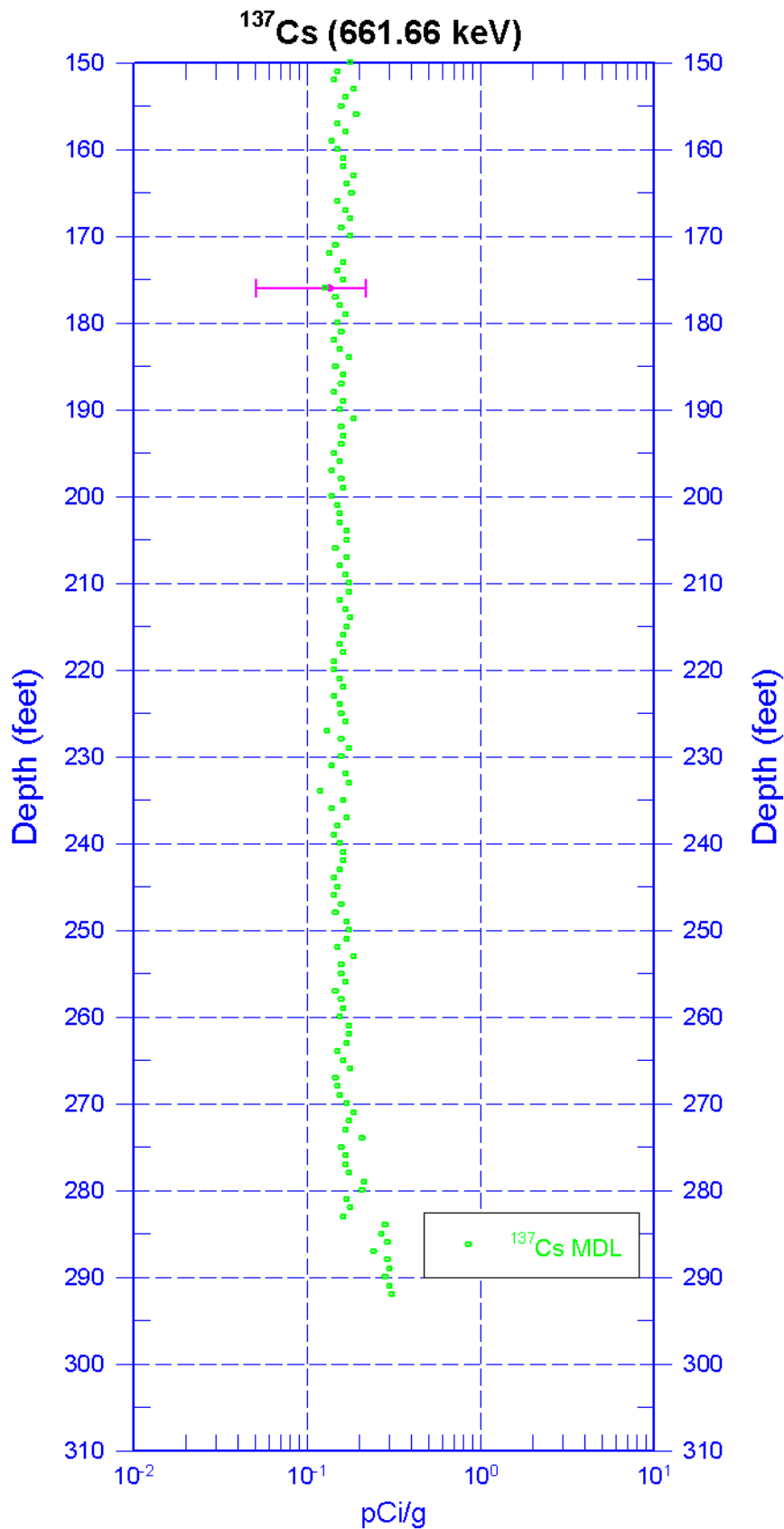
Repeat of Moisture

¹ GWL – groundwater level

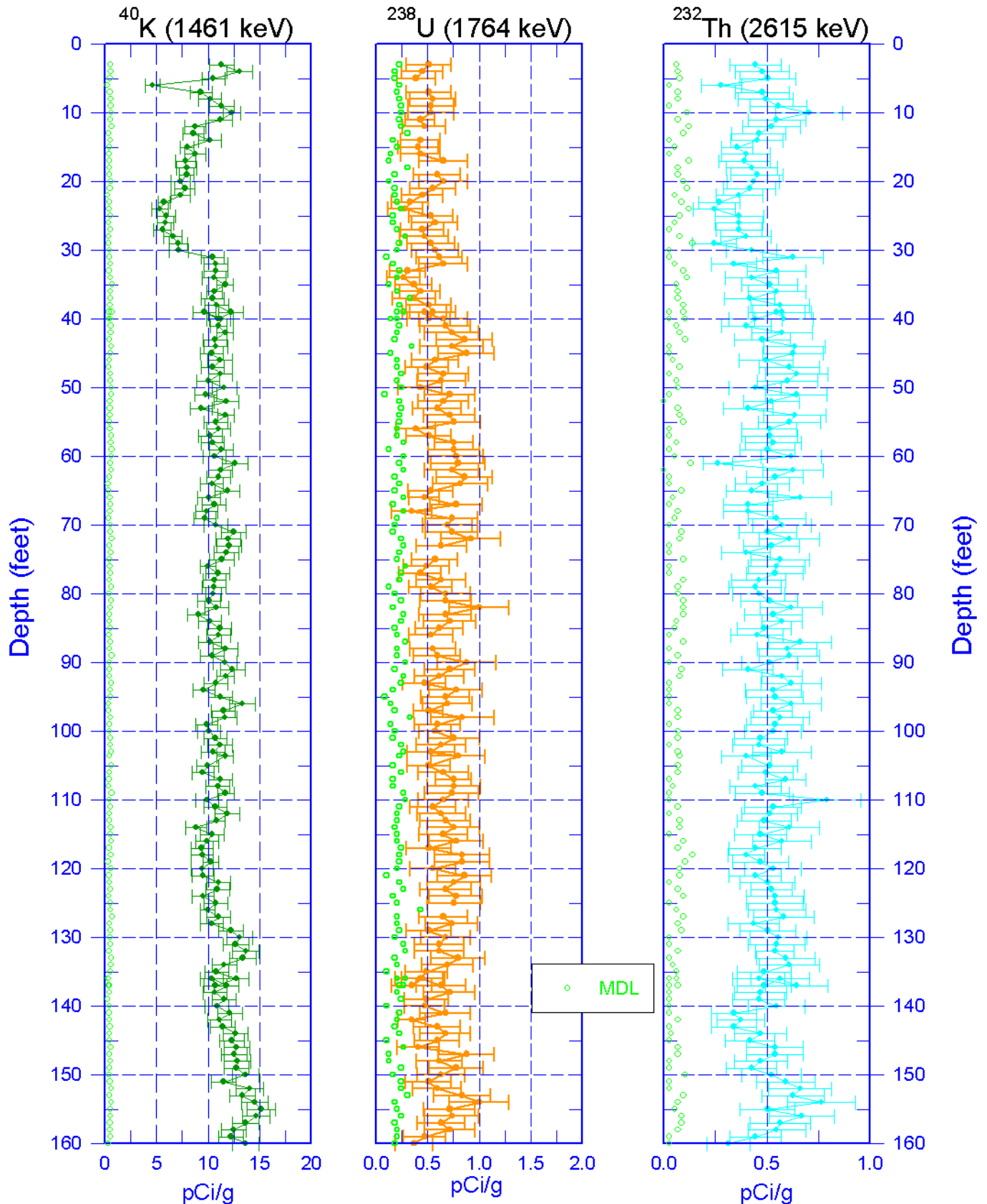
299-E25-24 (A4769) Manmade Radionuclides



299-E25-24 (A4769) Manmade Radionuclides

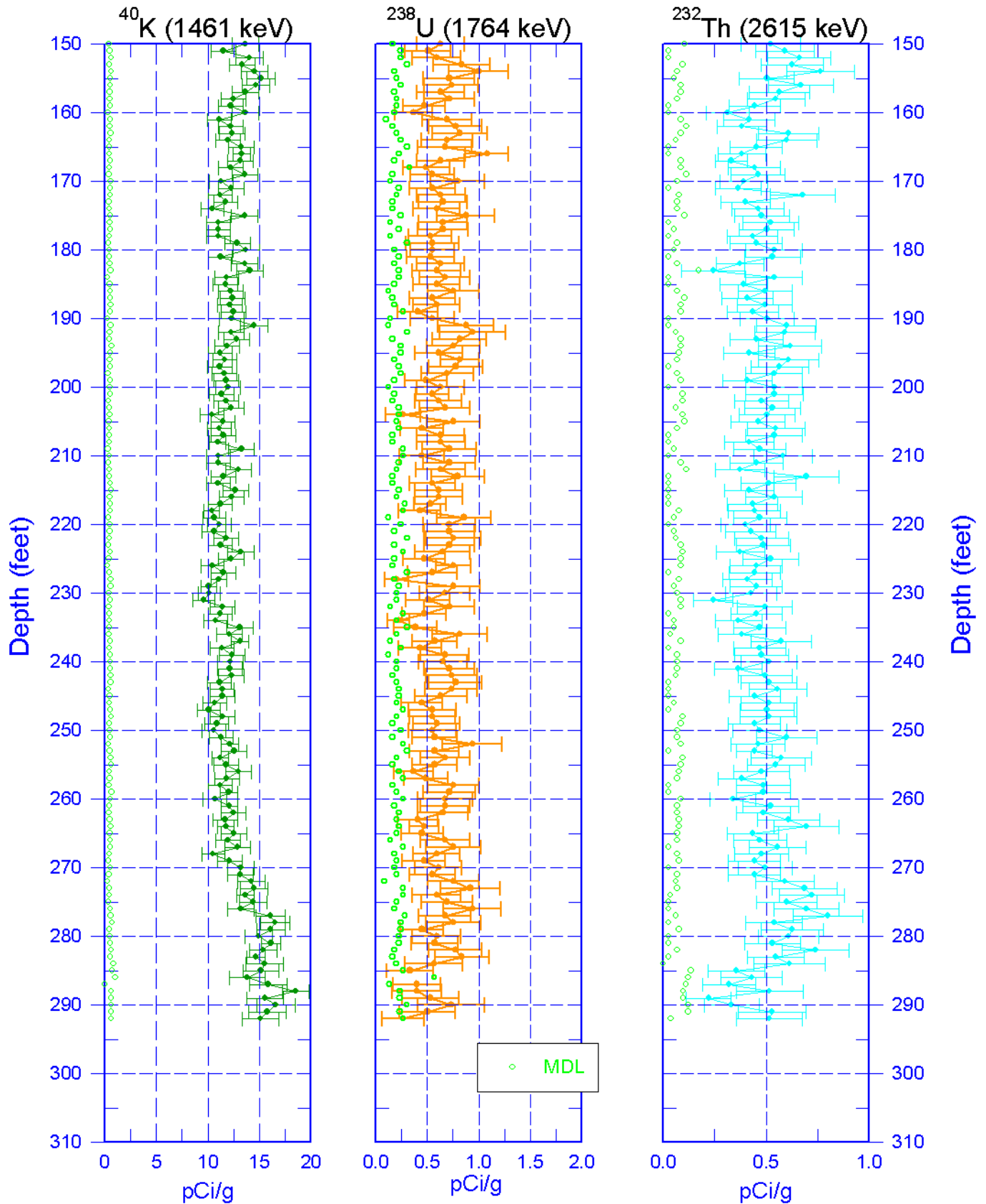


299-E25-24 (A4769) Natural Gamma Logs



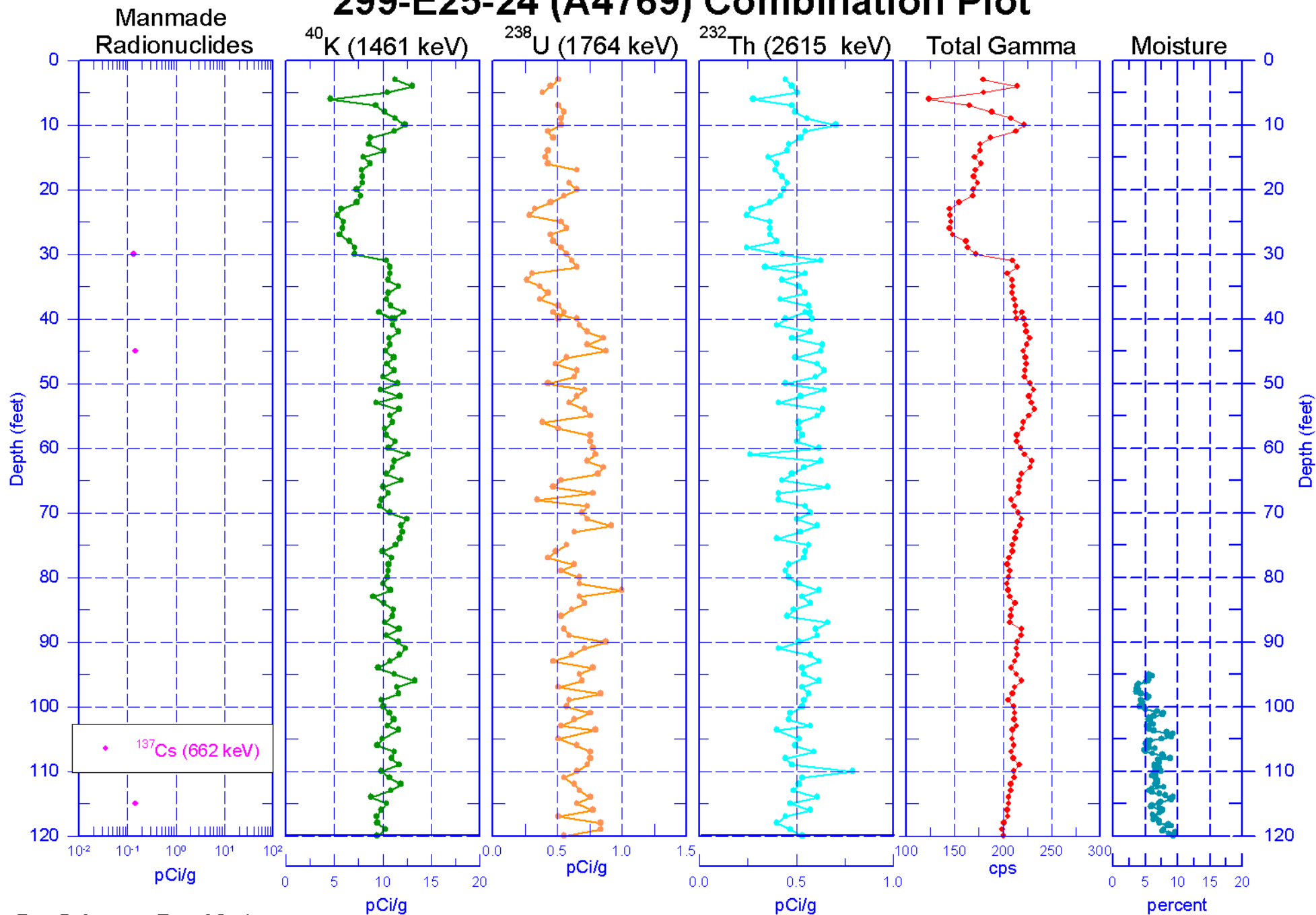
Zero Reference = Top of Casing

299-E25-24 (A4769) Natural Gamma Logs

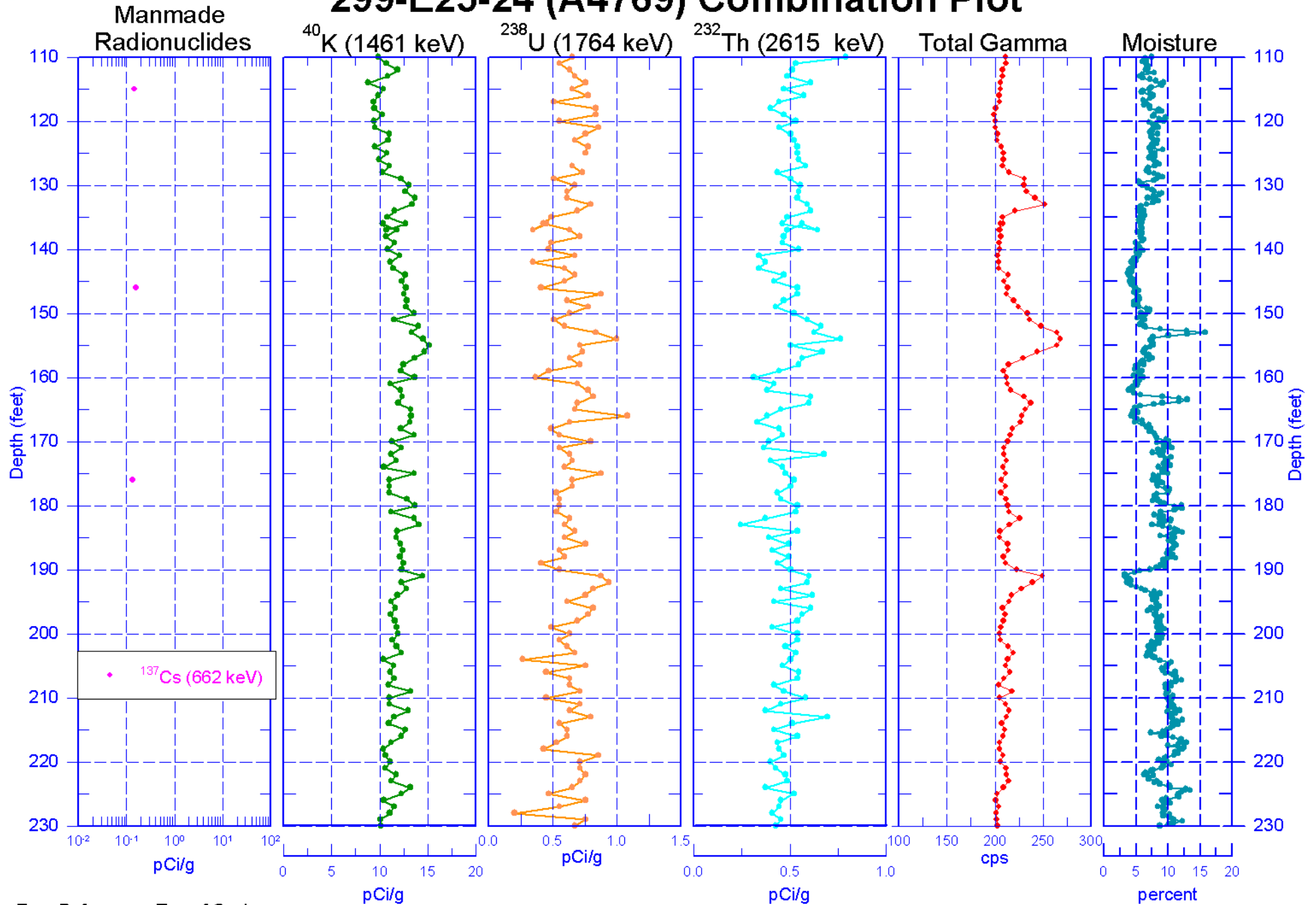


Zero Reference = Top of Casing

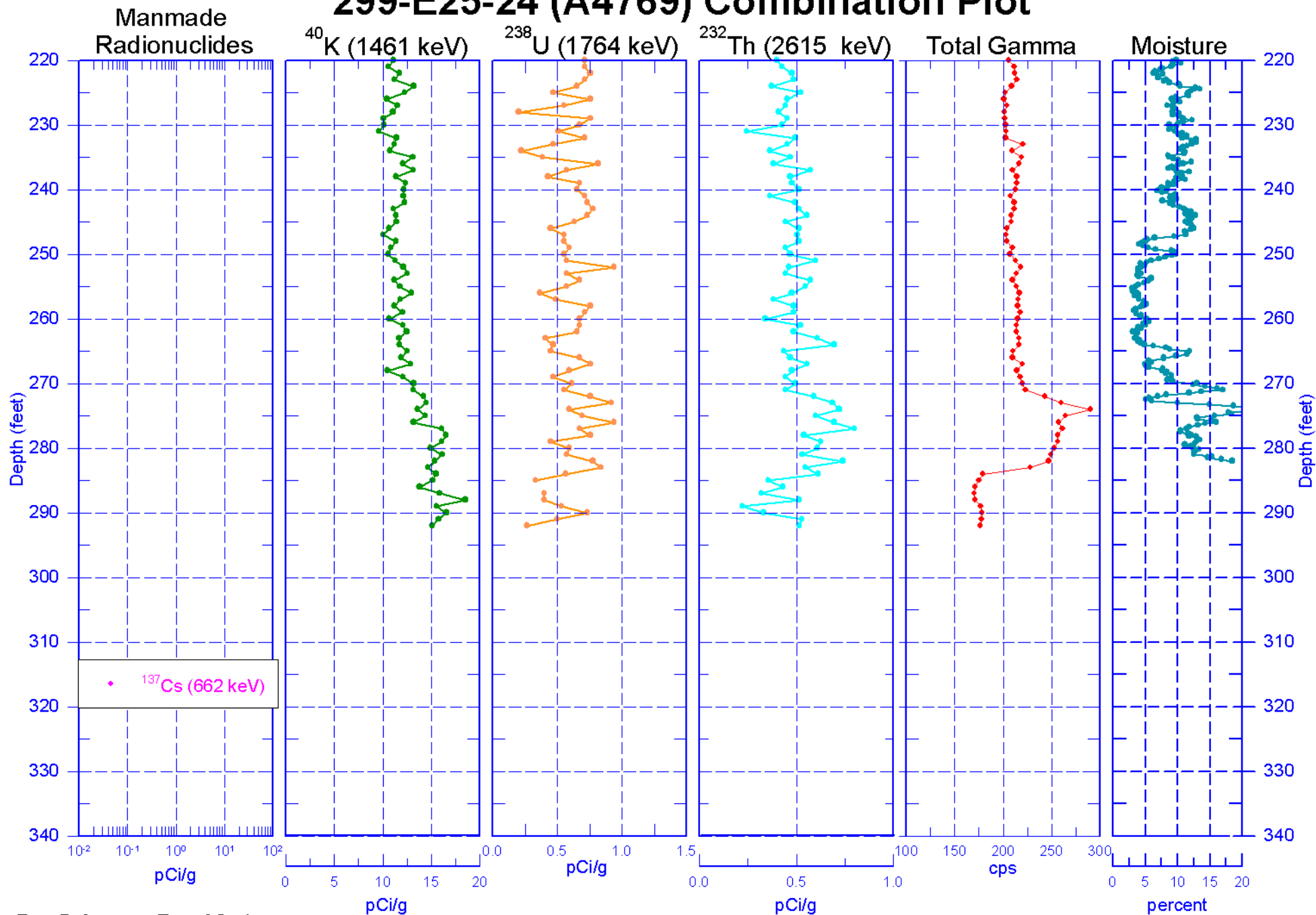
299-E25-24 (A4769) Combination Plot



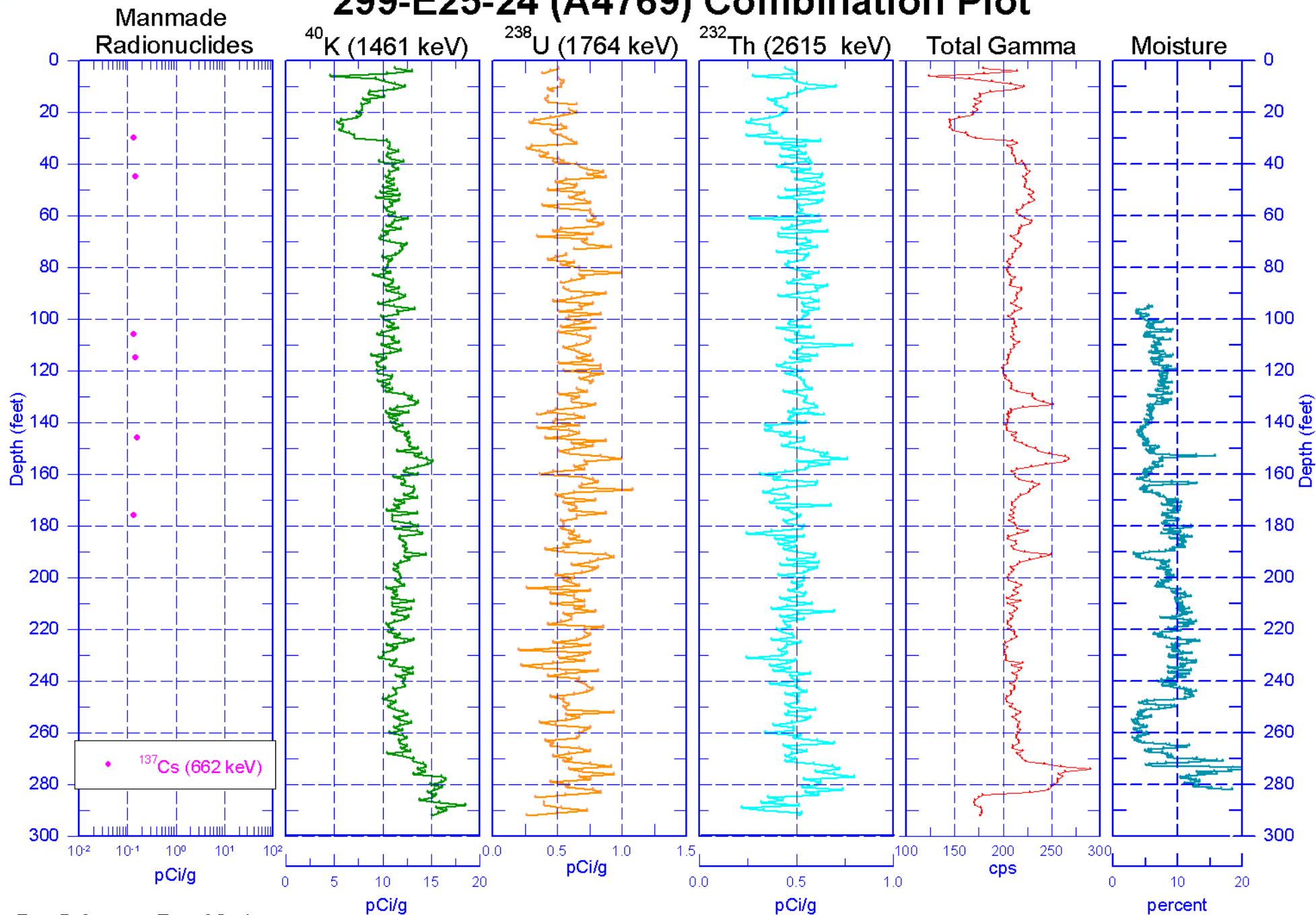
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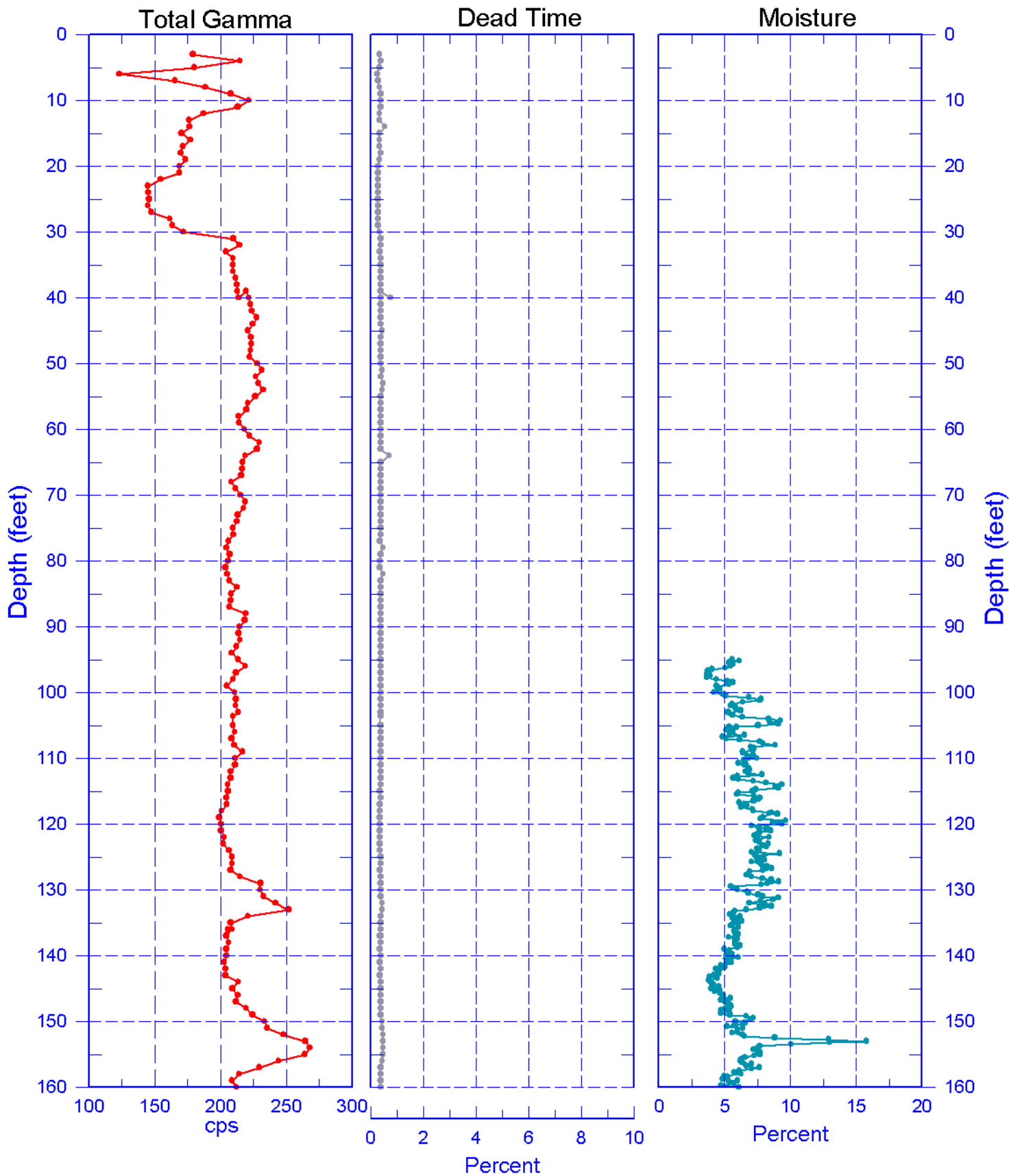


299-E25-24 (A4769) Combination Plot



299-E25-24 (A4769)

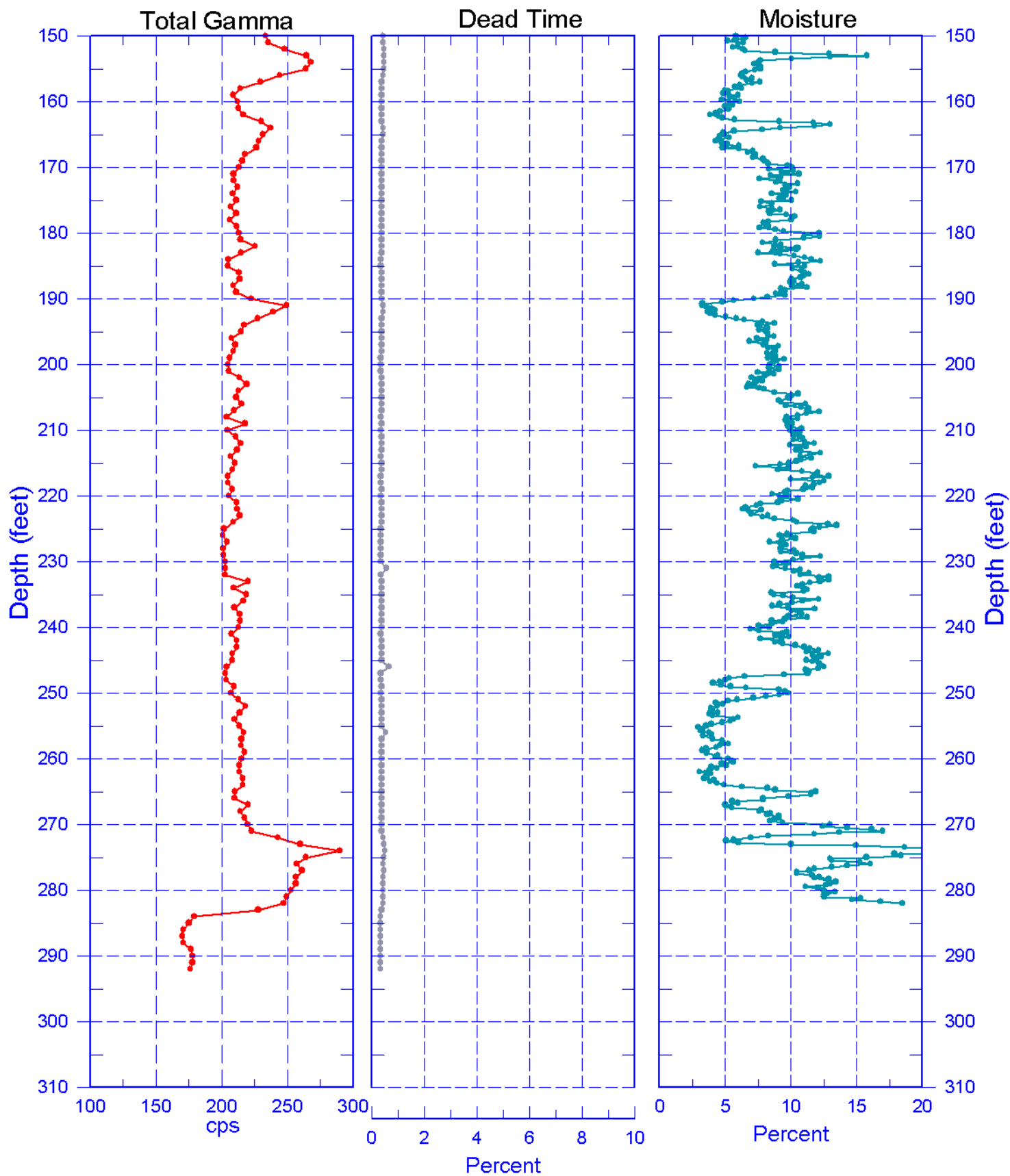
Total Gamma, Dead Time & Moisture



Reference - Top of Casing

299-E25-24 (A4769)

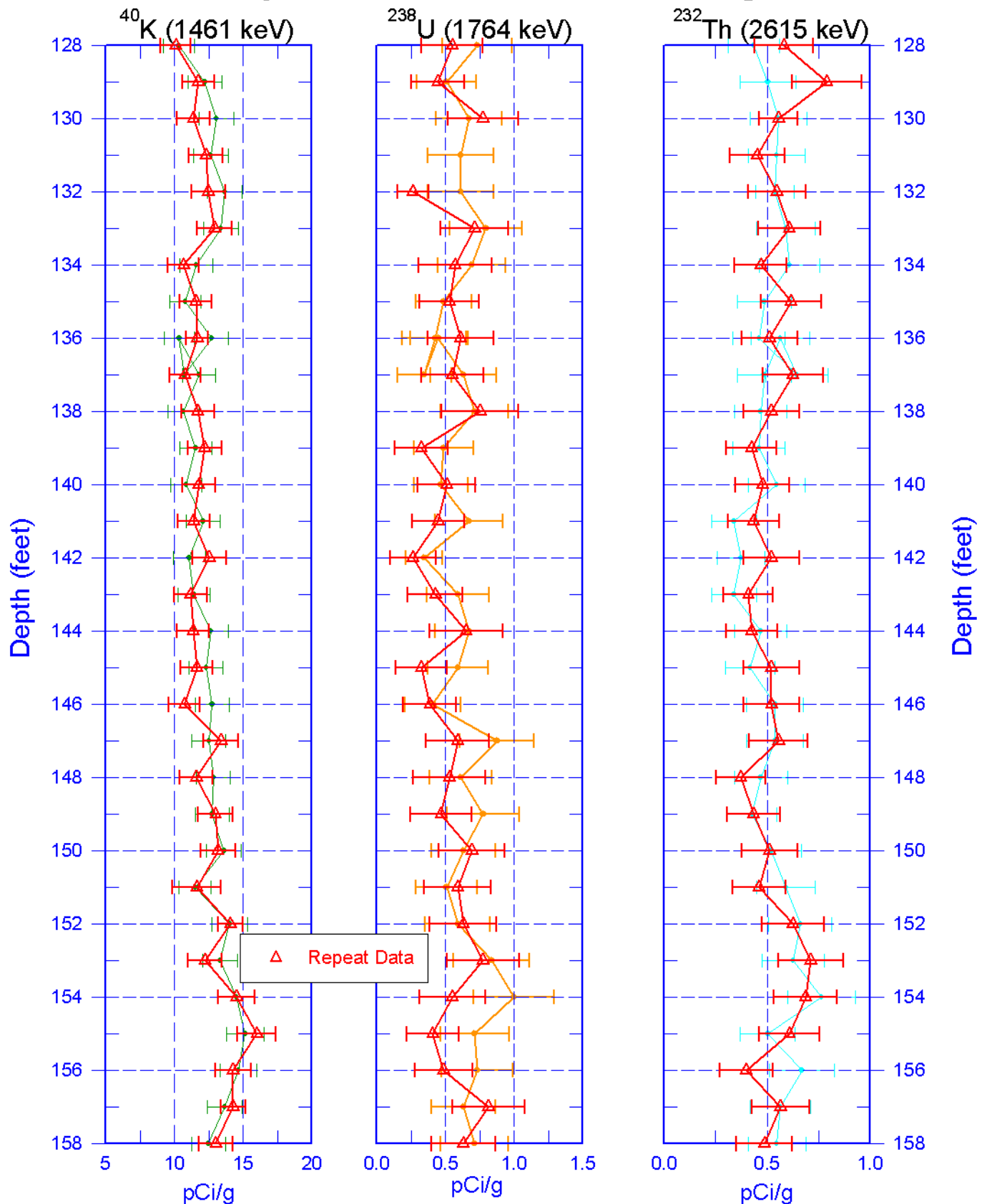
Total Gamma, Dead Time & Moisture



Reference - Top of Casing

299-E25-24 (A4769)

Repeat of Natural Gamma Logs



Zero Reference = Top of Casing

299-E25-24 (A4769)

Repeat of Moisture

